Coordination and response – 2022 June IGCSE 0610

1. June/2022/Paper_ 11/No.26

Which hormone triggers the 'fight or flight' response?

A testosterone

B oestrogen

C adrenaline

D insulin

2. June/2022/Paper_ 11/No.27

Which organ detects and coordinates the response to changes in internal body temperature?

A brain

B heart

C liver

D skin

3. June/2022/Paper_ 11/No.28

Which statement describes the plant response known as phototropism?

A All parts of a plant grow towards light.

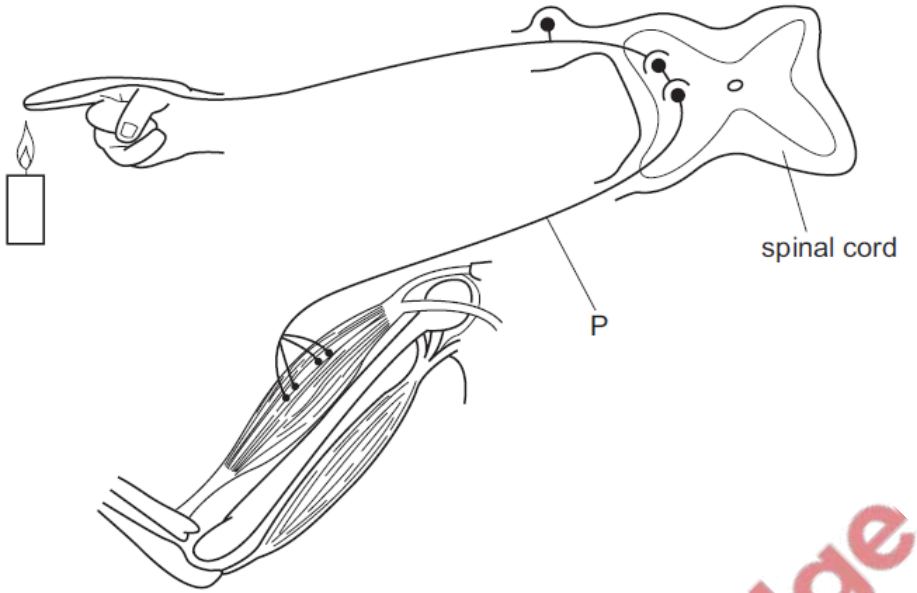
B All parts of a plant grow away from light.

C Plant shoots grow towards light.

D Plant roots grow towards light.

4. June/2022/Paper_ 12/No.26

The diagram shows a simple reflex arc.



What is the function of the part labelled P?

A passing impulses to the central nervous system

B passing impulses to the effector

C passing impulses to the receptor

D passing impulses to the sensory neurone

5. June/2022/Paper_ 12/No.27

Which endocrine gland produces insulin?

A adrenal gland

B ovary

C pancreas

D testes

6. June/2022/Paper_ 12/No.28

Where in the body are the blood temperature receptors?

A brain

B liver

C muscles

D skin

7. June/2022/Paper_ 13/No.27

A simple reflex arc consists of four components between a receptor and a response.

Which component is the motor neurone?

receptor → **A** → **B** → **C** → **D** → response

8. June/2022/Paper_ 13/No.28

Which part of the eye focuses light on the retina?

A cornea

B pupil

C iris

D lens

9. June/2022/Paper_ 13/No.29

Which statement about the hormone insulin is correct?

A It is produced by the liver and raises blood sugar concentration.

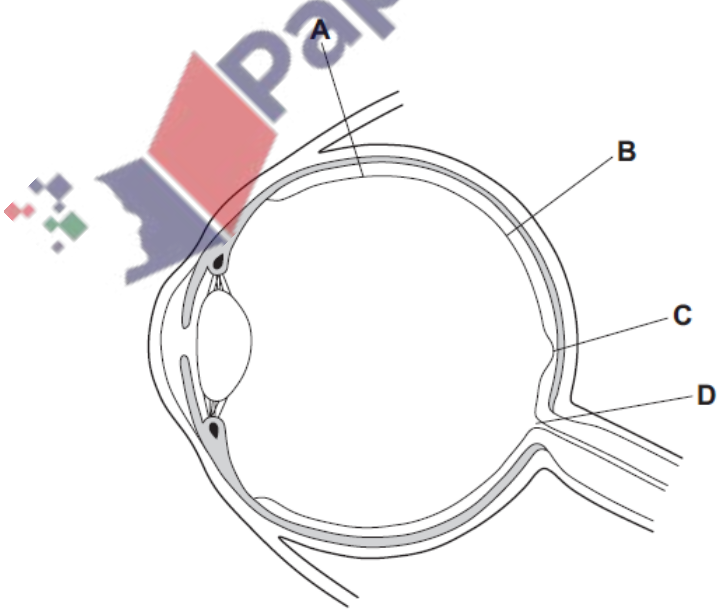
B It is produced by the liver and lowers blood sugar concentration.

C It is produced by the pancreas and raises blood sugar concentration.

D It is produced by the pancreas and lowers blood sugar concentration.

10. June/2022/Paper_ 21/No.24

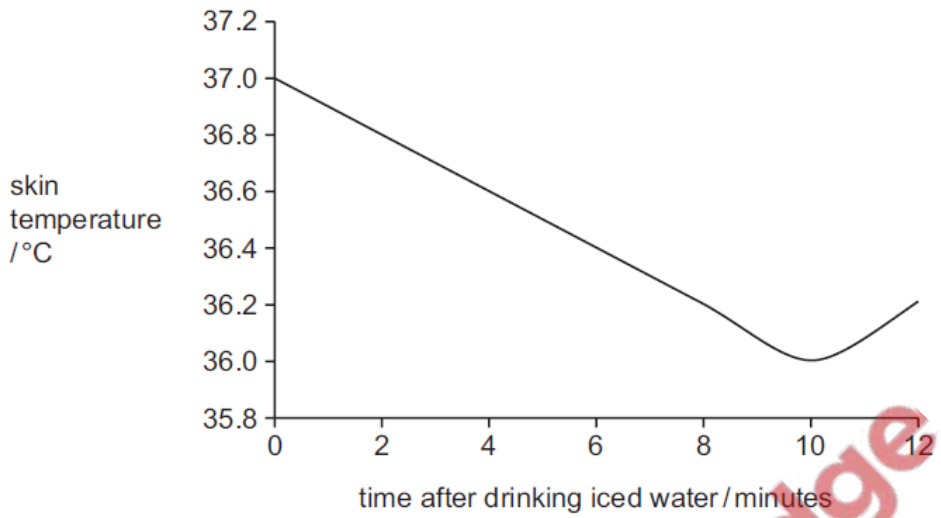
Where in the eye is the greatest concentration of cells that allow humans to see colour?



11. June/2022/Paper_ 21/No.25

A scientist investigated the effect of drinking iced water on skin temperature. They drank a large volume of iced water and monitored the temperature of their skin.

The results are shown on the graph.



Which explanation of the change in skin temperature during the first 10 minutes is correct?

A Vasoconstriction occurred increasing blood flow to the skin.

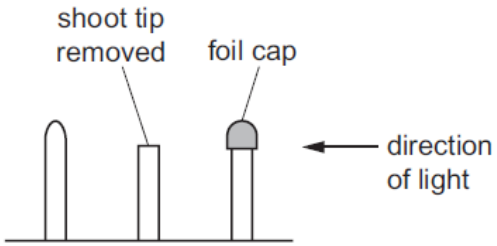
B Vasoconstriction occurred reducing blood flow to the skin.

C Vasodilation occurred increasing blood flow to the skin.

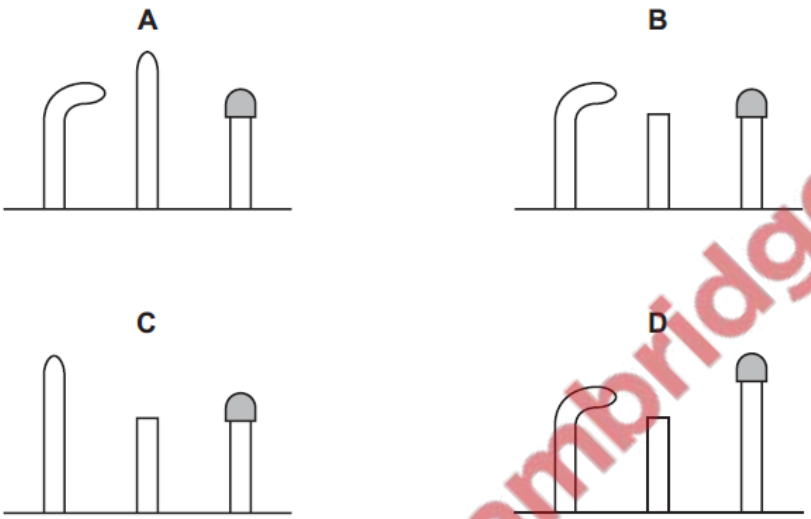
D Vasodilation occurred reducing blood flow to the skin.

12. June/2022/Paper_ 21/No.26

An experiment was set up to investigate the growth of shoots in different conditions, as shown.

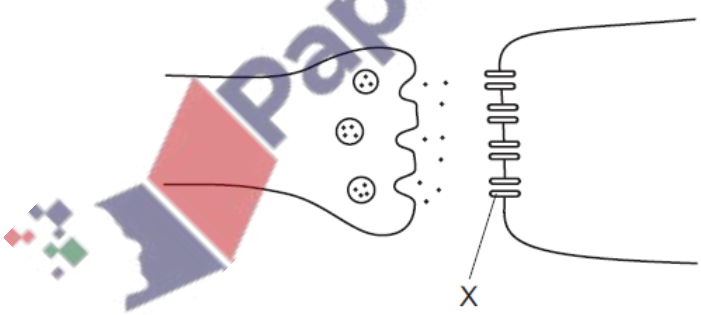


Which diagram shows the results that would be seen a few days later?



13. June/2022/Paper_ 23/No.24

The diagram shows the junction between two neurones.



What is labelled at X?

A neurotransmitter

B vesicle

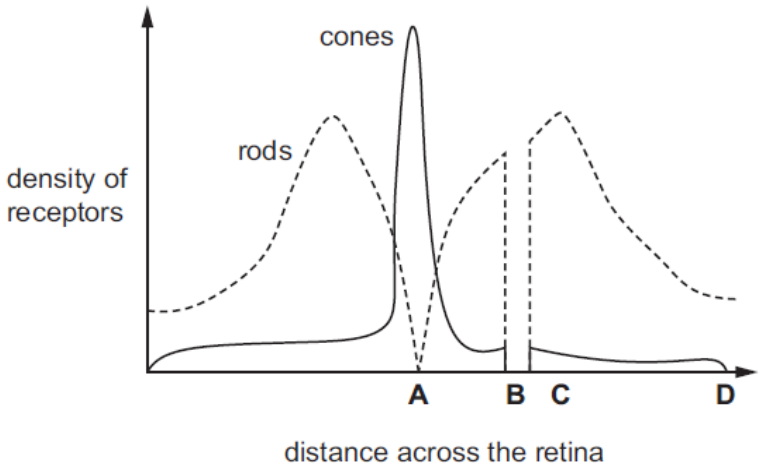
C neurotransmitter receptor molecule

D synaptic cleft

14. June/2022/Paper_ 23/No.25

The diagram shows the density of rods and cones across a section of the retina.

What is the position of the fovea?



15. June/2022/Paper_ 23/No.26

What is the synthetic plant hormone 2,4-D used for?

A genetic engineering

B inhibiting phototropism

C killing weeds

D promoting germination

16. June/2022/Paper_ 32/No.2(a_ d)

(a) Define the term homeostasis.

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.....

.....

..... [2]

(b) The box on the left shows the beginning of a sentence.

The boxes on the right show some sentence endings.

Draw **three** straight lines to make three correct sentences about the brain.

The brain	and spinal cord are part of the peripheral nervous system.
	coordinates body functions.
	contains receptors that detect the temperature of the blood.
	produces insulin.
	receives impulses from motor neurones.
	receives impulses from the optic nerve.

[3]

(c) Fig. 2.1 shows part of a cross-section of mammalian skin.

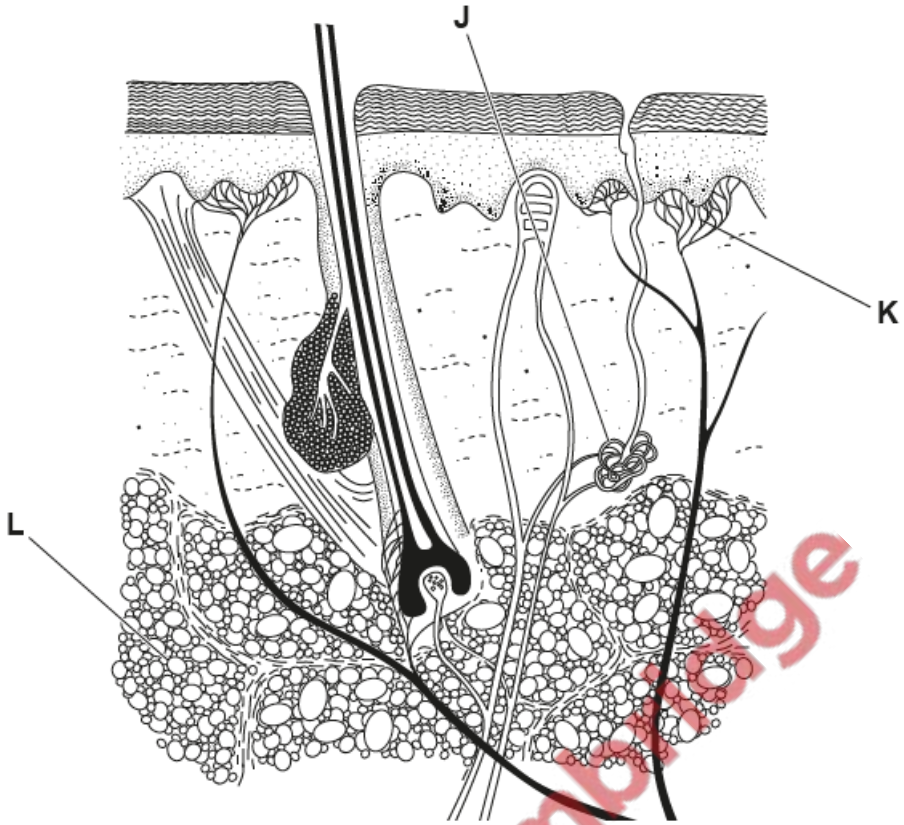

Fig. 2.1

State the names of **J**, **K** and **L** in Fig. 2.1.

J .....

K .....

L .....

[3]

(d) Describe how structures in the body help to keep the body warm in a cool environment.

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..... [3]

17. June/2022/Paper_ 32/No.7(a_ d)

(a) A student investigated plant growth responses.

A seedling was attached to a support stand and placed under a lamp.

(i) Complete Fig. 7.1 by drawing the expected position of the root **and** shoot after seven days of growth.

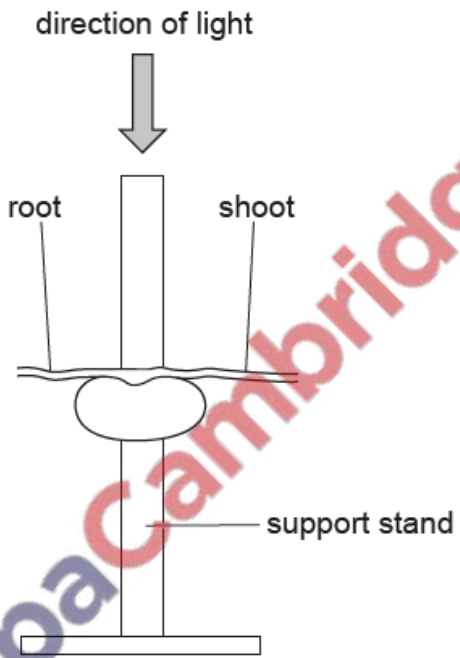

Fig. 7.1

[2]

(ii) State the type of growth response plants show in response to the direction of light.

..... [1]

(iii) State the type of nuclear division that is used for growth.

..... [1]

(b) Seeds need certain factors for germination.

Circle **three** factors that are needed for germination.

carbon dioxide	**iron**	**nitrogen**	**oxygen**
suitable temperature	**water**	**vitamin C**	

[3]

(c) Complete the sentences.

Seeds contain proteins for the ..... of developing shoots and roots. Proteins contain the elements ..... , oxygen, ... and nitrogen.

The new leaves of a seedling need the mineral ion ..... to make the green pigment ..... .

This green pigment is needed to carry out the process of ....., in the presence of light.

[6]

18. June/2022/Paper_ 33/No.9(a_ c)

(b) Fig. 9.1 is a diagram of a section of a human eye.

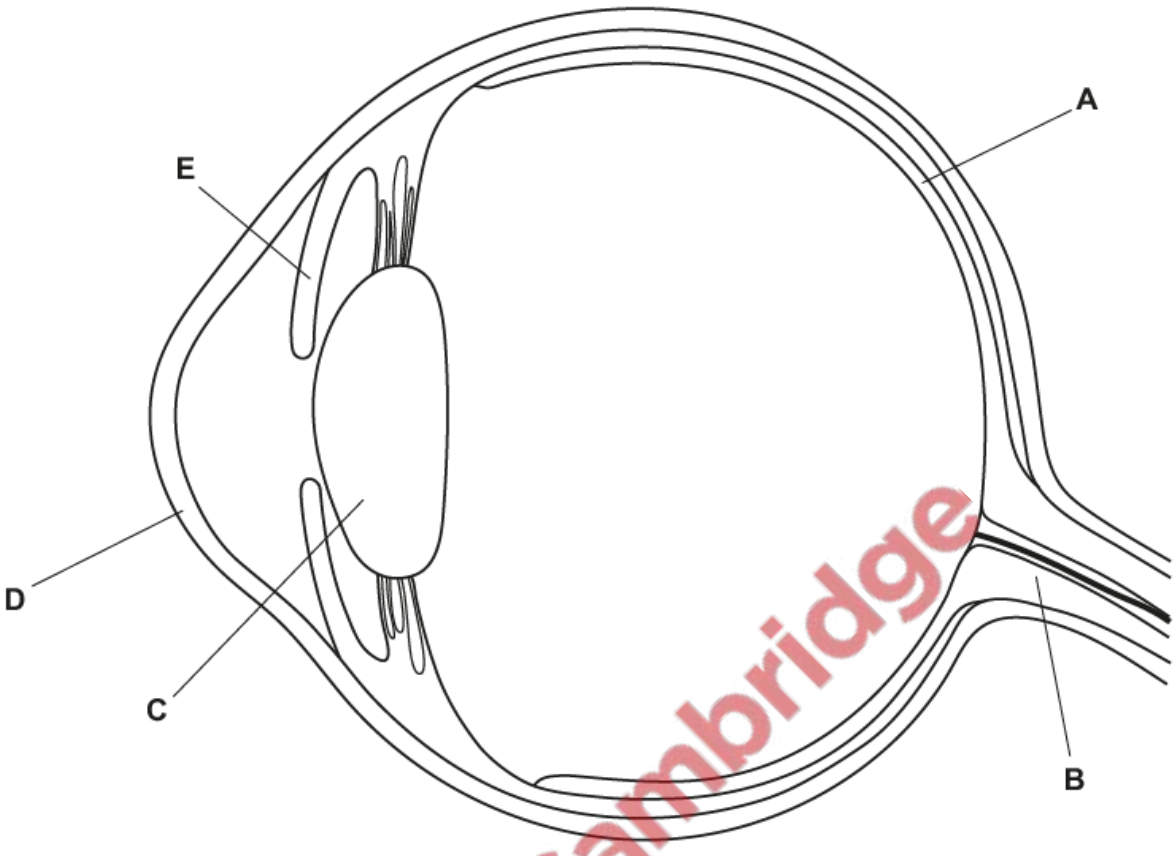

Fig. 9.1

State the letter of the structure shown on Fig. 9.1 that:

- focuses light on the light receptors .....
- refracts light .....
- controls how much light enters the pupil .....
- carries impulses to the brain .....

[4]

(c) Fig. 9.2 is a diagram of an eye in a dark room and in a light room.

Draw the expected size of the pupil on the eye in the **light room** in Fig. 9.2.

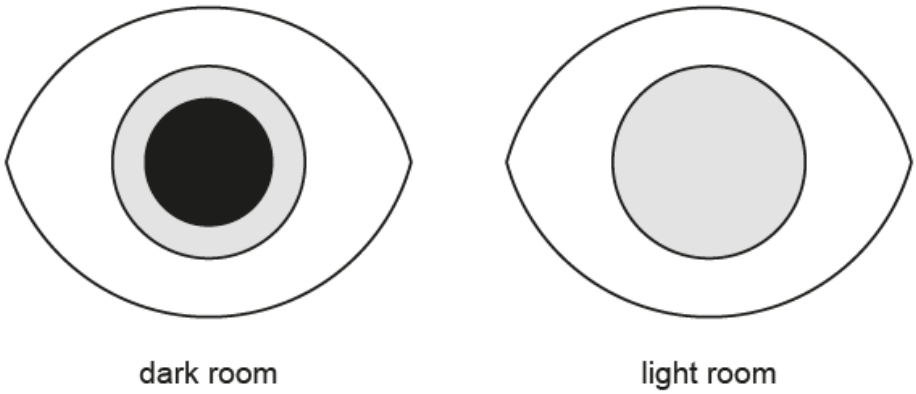

Fig. 9.2

[1]

19. June/2022/Paper_ 42/No.3(a_ b)

The eye is adapted for focusing on near and distant objects.

Fig. 3.1 shows the parts of the eye involved in focusing. The eye is focused on a distant object.

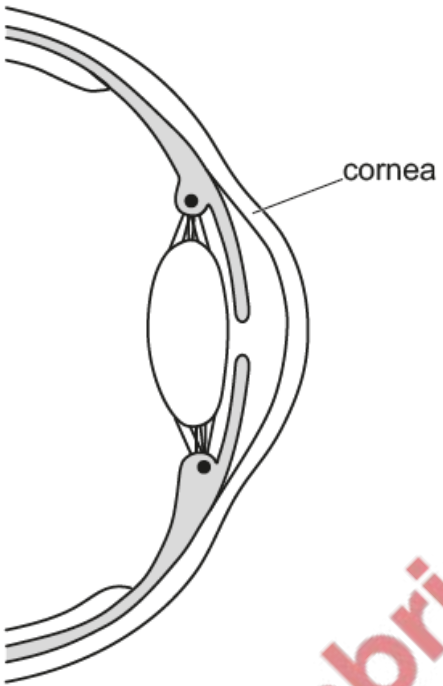

Fig. 3.1

(a) **(i)** State the term used to describe what happens to light as it passes from the air into the cornea.

..... [1]

(ii) Describe **and** explain the changes that occur in the eye when adjusting focus from a **distant** object to a **near** object.

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..... [3]

(b) Rods and cones are the receptors in the retina of the eye.

(i) Describe the functions of rods and cones in the eye.

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..... [4]